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TRANSACTIONS

OF THE

ILLINOIS STATE ACADEMY OF SCIENCE

VOLUME 34 MARCH, 1942 NUMBER 3

PRELIMINARY PROGRAM

Thirty-fifth Annual Meeting

Friday and Saturday, May 8 and 9, 1942
UNIVERSITY OF ILLINOIS, URBANA

Published by the Academy
Affiliated With the Illinois State Museum Division
Department of Registration and Education
Centennial Building, Springfield, Illinois.

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ANNOUNCEMENTS

Authors submitting manuscripts for consideration by the publications committee of the 1942 **Transactions** must leave them with Section Chairmen on or before May 8th. These scripts must be in final form. They must be typed **(double spaced)** in dark ribbon, and should not exceed 1200 words in length (including tables and not more than one illustration) unless special arrangements are made. (This amount makes 2 printed pages, and holds down for author the cost of reprints and extra pages.) Beneath title should appear author's name and in a separate line his school and /or town. At the end of article should appear **address to which proof is to be sent next November.** Inasmuch as the Academy does not have funds for preparing illustrations, all drawings, charts, and special formulae must be submitted by the author in India ink, and all photographs in gloss print (no photostats can be used), with each figure mounted on a separate sheet with title typed below. Any author whose paper is published must be a member of the Senior Academy ($1.00 annual dues) and must pay an editorial fee of $1.00 to help defray expenses of publication.

Authors are asked to send, if possible, brief **abstracts** of their articles, immediately to **J. S. Ayars, Publicity Director, 131 Natural Resources Bldg., Urbana, Ill.** If Section Chairmen already have these abstracts, please forward at once to Mr. Ayars.

Requests for research grants from the **A.A.A.S.** are received each year up to March 31st and recipients announced at the May meeting of the Academy. Chairman for the current year is William C. Rose, Dept. of Chemistry, University of Illinois. Chairman for the ensuing year will be announced in the June issue of the **Transactions.**

The Academy announces that a **Collegiate Section** is being formed for undergraduate college and university students. Response from college groups has been so immediate and enthusiastic that a program of 36 papers is being given at its first meeting See pp. 255-6.

State Physics Teachers Association, affiliated with the Academy, will meet in 119 Physics Bldg., Green St., University of Illinois Campus, on Friday morning, May 8th, from 10 to 12 o'clock, and at a special table at the general Academy luncheon.

Illinois Conference of Family Relations will meet from 11 a. m. to noon and from 4:30 to 5:00 p. m. (business meeting) Friday, May 8. Place will be announced at time of registration. The Conference will join with the Social Science Section of the Academy for luncheon and afternoon sessions.

A lecture-demonstration by Dr. Phillips Thomas, Westinghouse Electric and Mfg. Co., will be given at Lincoln Hall Theatre Thursday eve., May 7, under sponsorship of Student Branch A. I. E. E. (Admission by ticket.)

Sigma Delta Epsilon, an organization of graduate women in science, will sponsor a breakfast at 7:30 Saturday morning for all women, including high school students, who are interested in science. Place and price will be announced at time of registration.

Saturday morning trips will consist this year of visits to important museums, and Junior Academy Exhibits, and inspection of research facilities of the University of Illinois and of the scientific surveys on the campus. The cyclotron, betatron, etc. are included on the itinerary, as well as the Physical Science Museum. Details will be published in the Final Program. Members of Senior Academy, the Collegiate Section, the Junior Academy, and their guests are urged to indicate their choice at the time of registratiton on Friday morning, May 8th.

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OFFICERS AND COMMITTEES OF THE ILLINOIS ACADEMY OF SCIENCE 1941-1942

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N. D. Cheronis, 5556 Ardmore Ave., Chicago.
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George E. Ekblaw, Natural Resources Bldg., Urbana.
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Delegate to Conservation Council: V. O. Graham, 4028 Grace Street, Chicago.
Publicity Director: J. S. Ayars, Natural History Survey, Urbana.
General Chairman Local Arrangements for 1942 meeting at University of Illinois: George E. Ekblaw, Geological Survey, Urbana.
Junior Academy Arrangements Chairman, 1942 Meeting: Louis A. Astell, University H. S., Urbana.

Committee on High School Science and Clubs:

Chairman: Mrs. Mary Creager, Chester.
Assistant Chairman: Allen R. Moore, Cicero.
Chairman of Exhibits: John C. Ayres, Chem. Dept., Univ. of Ill.
Assistant Chairman of Exhibits: Dwight L. Barr, Chicago.
Co-Chairmen of Judging: John Chiddix, Normal, and Harry Givens, Joliet.
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Correspondent: Blanche McEvoy, Normal.
Contributing Editor: Audry Hill, Carbondale.
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GENERAL PROGRAM

ALL ADDRESSES AND SECTION MEETINGS OPEN TO THE PUBLIC

University of Illinois Campus, Urbana

May 7-8-9, 1942

THURSDAY, MAY 7

6:00 *p. m. Council Meeting and Dinner.* Colonial Room Illini Union Bldg., Green St.

FRIDAY, MAY 8

8:00 *a. m. Registration* by all members and guests. Securing of Final Programs, tickets for annual banquet, registration for Saturday Visits. Lincoln Hall Lobby.

8:45 *a. m. Preliminary business meeting* of the Academy for all members. Appointment of nominations, resolutions and auditing committees. Lincoln Hall Theatre

9:30 *a. m. General Session.* Lincoln Hall Theatre.
Welcome by Arthur Cutts Willard, President of the University of Illinois.
Academy Presidential Address and Motion Picture in Color: "Conservation Research Program of the Illinois Natural History Survey," Theodore H. Frison, Chief of the Natural History Survey, Urbana.
Illustrated Lecture: "The Design, Construction and Operation of a Cyclotron." P. Gerald Kruger, Professor of Physics, University of Illinois, Urbana.

12:00 *Luncheon,* Third Floor, Illini Union Bldg., Green St. 65 cents.
Mail reservations to George E. Ekblaw, Geological Survey, Urbana *by May* 1.

1:00-4:30 *Junior Academy* Science Club Exhibits on display for judging, and open to public inspection. Lower Gym, Woman's Bldg., Wright St.

1:30-4:30 *Section meetings*: Senior, Collegiate, and Junior. University of Illinois classrooms and lecture rooms. All papers, to be considered for publication, must be given to Section Chairmen by the end of this session. See Announcements page for specifications.

5:00-5:30 *Business Meeting for all members Senior Academy.* Will be streamlined. Please come. Lincoln Hall Theatre.

6:00 *p. m. Annual Banquet* for Senior Academy, Collegiate Section, and guests. Illini Union Bldg. $1.00 Informal. Announcements of A.A.A.S. research awards. *Mail reservatitons to George E. Ekblaw, Geological Survey, Urbana, Ill., by May* 1*st*. Call for tickets by 10:30 on Friday, May 8th, at registration desk.

8:15 *p. m. Annual Lecture* for everyone attending Academy sessions, and for the general public. "A Naturalist in the South Seas," illustrated, by Karl P. Schmidt, Chief Curator, Dept. of Zoology, Field Museum of Natural History, Chicago. University of Illinois Auditorium. Special section will be reserved for those attending Academy banquets.

SATURDAY, MAY 9

8:45 *a. m. Meeting of the Council* for 1942-43. Dr. Frison's office, 135 Natural Resources Bldg., South Campus.

9:30 a. m. Annual Trips. Important museums and the Junior Academy exhibits will be visited, and trips conducted to inspect research facilities of the University and of the scientific surveys located on the campus. Details will be given in the Final Program.

SECTION MEETINGS

FRIDAY, MAY 8, 1942
1:30-4:30

AGRICULTURE, C. H. Oathout, Chairman, Macomb, Ill.
103 New Agriculture Bldg.

Election of Chairman for 1942-43.

1. Germination studies of brome grass.
   R. F. Fuelleman, Univ. of Illinois, Urbana.

1a. What are we doing with castor beans? W. L. Burlison and R. F. Fuelleman, Univ. of Illinois, Urbana.

2. Relative photosynthetic capacity of stalks, leaf sheaths, and leaf blades in maize as measured by the contribution each makes to the development of the grain.
   Geo. H. Dungan, Univ. of Illinois, Urbana.
3. Using slope of land as a basis for farm planning.
   Burdette Graham, Prairie City Community H. S.
4. The chemical composition of farm crops as affected by soil type and treatment.
   H. J. Snider, Univ. of Illinois, Urbana.
5. The practical side of the nitrogen cycle.
   E. R. Spencer, McKendree College, Lebanon.
6. Results of experiments in improvement of pastures for dairy cattle.
   W. B. Nevens, Univ. of Illinois, Urbana.
7. War production and soil conservation in Illinois.
   Oren L. Whalin, Univ. of Illinois, Urbana.
8. The out-of-school education for rural youth.
   D. E. Lindstrom, Univ. of Illinois, Urbana.
9. The use of genetics in solving the variety problem for peach growers.
   M. J. Dorsey, Univ. of Illinois, Urbana.
10. Cross-breeding in swine.
    E. Roberts, Univ. of Illinois, Urbana.

Leave manuscripts with Chairman by end of meeting

ANTHROPOLOGY, Donald E. Wray, Chairman, 604 Caroline St., Peoria
120 Architecture Bldg.

Election of Chairman for 1942-43.

1. Indian trail markers.
   Floyd L. Barloga, Peoria.
2. Report on the Archaeology of Pere Marquette State Park.
   George M. Link, Grafton.
3. Additional Clear Lake Village materials.
   Mrs. E. Schoenbeck, Peoria.
4. Tree ring dating in the middle west.
   John W. Griffin, Daytona Beach, Fla.
5. Analysis of archaeological sites.
   Donald E. Wray, Peoria.
6. Archaeological horizons in southern Illinois.
   Moreau Maxwell & John Bennett, Univ. of Chicago.
7. Panel discussion: Middle Mississippian Culture.

Turn papers in to Chairman before leaving.

BOTANY, J. Fisher Stanfield, Chairman, Chicago Teachers College.
217 Noyes Chemistry Lab.

Election of Chairman for 1942-43.

1. Leaves in ontogeny and phylogeny.
   Sister Mary Ellen O'Hanlon, Rosary College, River Forest.
2. A penicillium "disease" of ink.
   Robert A. Conover & Neil E. Stevens, Univ. of Ill.
3. The white-bracted Hymenopappus still grows in Illinois.
   Leo R. Tehon, Natural History Survey, Urbana.
4. Nitrogen content of oat chloroplasts.
   Arthur W. Galston, University of Illinois.
5. Plant sanctuaria.
   Jens Jensen, Ellison Bay, Wisconsin.
6. Rate of transpiration in two oat varieties grown under varying soil moisture levels.
   Glenn Ray Noggle, University of Illinois.
7. Notes on the distribution of some rarely reported species of Oedogonium.
   Max E. Britton, Northwestern University, Evanston.
8. Preliminary studies on the riboflavin (vitamin B2) content of plant materials.
   Stanley A. Watson, University of Illinois.
9. A study of the phytoplankton of Crab Orchard Lake.
   Walter B. Welch, Carbondale.
10. A checklist of the vascular plants in the University of Illinois woodlands.
    G. Neville Jones, University of Illinois.
11. Naphthalene acetic acid and the growth and composition of cereal grasses.
    R. E. Stephenson, University of Illinois.
12. A revision of the Illinois species of Rumex.
    Sidney Glassman, University of Illinois.
13. Island groves in Illinois prairies.
    A. G. Vestal, University of Illinois.
14. The Illinois species of Solidago.
    Dorothy Croker, University of Illinois.
15. Trees and shrubs of Champaign County, Illinois.
    Albert Feldman, University of Illinois.
16. Some growth responses of Soja and Vinca to vitamins.
    J. Stanfield Fisher, Chicago Teachers College.
17. New interpretations of Sphenophyllostachys based on a petrified specimen from an Iowa coal ball, A. T. Cross, Univ. of Cincinnati.

Turn manuscripts in before leaving.

CHEMISTRY, N. D. Cheronis, Chairman, 5556 Ardmore Ave., Chicago.
112 Chemistry Annex

Election of Chairman for 1942-43.

1. The role of the chemistry teacher in national defense.
   C. E. Ronneberg, Herzl Junior College, Chicago.
2. What the colleges are doing for national defense.
   H. W. Gould, Northern Ill. State Tchrs. College, DeKalb.
3. Review of 1940-41 movies useful in the teaching of physical science.
   L. V. Peterson, Supervisor Vis. Aids, Univ. of Ill.
4. Review of 1940-41 chemistry texts for use in the teaching of chemistry at the high school level.
   S. A. Chester, Bloomington H. S.
5. Review of 1940-41 texts for teaching of chemistry in first two years of college.
   M. H. McLain, Wilson Junior College, Chicago.

Chemistry (continued)

6. Suitable curricula for courses in high school chemistry.
   Sister M. Joan, College of St. Francis, Joliet.
7. Introducing new acid base terminology.
   C. W. Bennett, Western Ill. State Tchrs. College, Macomb.
8. Demonstration of unstable anionic complex formation by the method of electrometric titration with specific reference to indium salt solutions.
   T. Moeller, University of Illinois.
9. New sources of mineral elements in animal nutrition.
   W. P. Elmslie, Quincy.
10. Semi-micro methods in the teaching of chemistry: a review.
    N. D. Cheronis & P. G. Arvan, Wright Junior College, Chicago.

Turn manuscripts in before leaving

GEOGRAPHY, Joseph Van Riper, Chairman, Southern Ill. Normal U., Carbondale.

161 Noyes Chemistry Lab.

Election of Chairman for 1942-43.

1. The Black Sea and its borderlands. (Illustrated)
   W. O. Blanchard, University of Illinois.
2. Regional reality from the concept of space-time.
   Clarence L. Brown.
3. The colonial question.
   Flemin Cox, Southern Ill. Normal Univ., Carbondale.
4. Soils and rural population trends in Decatur County, Georgia.
   Alfred Booth, Univ. of Illinois.
5. The Murngin: an example of human geography.
   Edna M. Gueffroy, Bloomington.
6. Clay Products manufacture in the lower Wabash Valley.
   Alden Cutshall, Univ. of Illinois.
7. The uses and production of tung oil.
   Geo. C. DeLong.
8. The saxicultural landscape of the Sudbury area. (By title.)
   Thomas C. Barton, Southern Ill. Normal Univ., Carbondale.
9. The relations of geographic factors to some diseases.
   Geo. R. Wells, Senior High School, Decatur.

Give manuscripts to Chairman before leaving

GEOLOGY, A. H. Sutton, Chairman, University of Illinois, Urbana.

202 Entomology Bldg.

Election of Chairman for 1942-43.

1. Bituminous matter in Warsaw geodes.
   Percival Robertson, Principia College, Elsah.
2. Chester index ostracodes.
   C. L. Cooper, Illinois Geol. Survey, Urbana.
3. Devonian stromatoporoids.
   Allen F. Agnew, Univ. of Illinois, Urbana.
4. The morphology and distribution of Tasmanites ("Sporangites"); problematic fossils of the Devonian-Mississippian.
   J. M. Schopf, Illinois Geol. Survey, Urbana.
5. Niagara cherts from northern Illinois and southeastern Indiana.
   H. A. Lowenstam, Illinois State Museum, Springfield.
6. Rhythms in Upper Pennsylvanian cyclothems.
   J. M. Weller, Illinois Geological Survey, Urbana.

Geology (contiuned)

7. The "Trenton" near Morris, Illinois.
   C. L. Bieber, North Central College, Naperville.
8. Subsurface cross-sections near type Chester localities in western Illinois.
   F. E. Tippie, Illinois Geological Survey, Urbana.
9. Use of the Glen Dean limestone as a structural key horizon in the Illinois basin.
   G. V. Cohee, Illinois Geological Survey, Urbana.
10. Upper Pennsylvanian fossiliferous zones of Vermilion and Edgar counties.
    George M. Wilson, University of Illinois, Urbana.
11. Thickness of the glacial drift in DuPage County.
    A. C. Mason, Illinois Geological Survey, Urbana.
12. Incompetent sediments in the Illinois basin.
    W. H. Easton, Illinois Geological Survey, Urbana.
13. Future importance of strip mining in Illinois.
    G. H. Cady, Illinois Geological Survey, Urbana.
14. Small spores from Illinois No. 5 coal.
    A. L. Brokaw, Illinois Geological Survey, Urbana
15. Shape variation of some Lake Superior beach pebbles.
    R. M. Grogan, Illinois Geological Survey, Urbana.
16. Thermal analysis of pyritic clays.
    R. A. Rowland, Illinois Geological Survey, Urbana.
17. Redwall limestone of north-central Arizona.
    R. C. Gutschick, University of Illinois, Urbana.
18. The Pleistocene geology of Garrison quadrangle, North Dakota.
    Edward Simpson, University of Illinois, Urbana.

Turn papers in to Chairman by end of meeting.

PHYSICS, F. L. VerWiebe, Chairman, Univ. of Chicago, (On leave from E. Ill. St. Tchrs. Coll., Charleston.)

119 Physics Bldg.

Election of Chairman for 1942-43.

1. The inverted pendulum.
   C. N. Wall, North Central College, Naperville.
2. Meteorology. A new method of long range weather forecasting.
   W. E. Ewert, Chicago.
3. Normal daily temperatures for Aurora by comparison with Chicago.
   Clarence R. Smith, Aurora College, Aurora.
4. A demonstration power supply.
   O. L. Railsback, Eastern Ill. State Tchrs Coll., Charleston.
5. Color vision.
   V. Kibort, University of Chicago.
6. A demonstration radio set.
   A. F. Inglis, University of Chicago.
7. An outline of a physics course related to the C. A. A. program.
   Theodore Phillips, Wright Junior College, Chicago.
8. Falling bodies and the cause of gravity.
   W. C. Ewert, Chicago.
9. Why not express the horsepower in foot-poundals?
   C. E. Ronneberg, Herzl Junior College, Chicago.
10. X-Ray diffraction studies on physiological changes in bone.
    C. I. Reed and B. P. Reed, Univ. of Ill. Coll. of Medicine, Chicago.
11. The betatron, by D. W. Kerst, Univ. of Illinois.

Leave manuscripts with Chairman before going.

PSYCHOLOGY and EDUCATION, J. M. Hughes, Chairman, Northwestern University, Evanston, Ill.

319 Gregory Hall

Election of Chairman for 1942-43.

1. The problem of college student morale during war.
   Frances W. Hibler, Ill. State Normal Univ., Normal.
2. The war between human nature factions.
   Coleman R. Griffith, Univ. of Illinois.
3. Mental hygiene effects of war upon children.
   Paul A. Witty, Northwestern Univ., Evanston.
4. Financing public education in Illinois with specific reference to the war period.
   C. A. DeYoung, Ill. State Normal Univ., Normal.
5. Hand writing as a factor in credit rating.
   William R. Laughlin, Loyola Univ., Chicago.
6. What can the elementary school do to prepare for winning the peace?
   Edwin H. Reeder, Univ. of Illinois.

Hand manuscripts in before leaving.

SOCIAL SCIENCE, C. W. Schroeder, Chairman, Bradley Polytechnic Institute, Peoria, Ill.

1. Luncheon meeting. University Y.M.C.A., Wright St.
   Paper by Florian Znaniecki; The Social Scientist in Time of Crisis.
2. Afternoon meeting.

214 New Agriculture Bldg.

Election of Chairman for 1942-43.

Federal regulation of business enterprise. V. Dake Jolley, Wheaton College.
The village population of Illinois. Samuel C. Ratcliffe, Illinois Wesleyan.
Chicago and the down state. William B. Philip, Bradley College.

(Thirty-minute discussion of above led by Albert Lepawsky, Univ. of Chicago.)

Symposium on "The Fate of the Family."

Ernest R. Mowrer, Northwestern.
B. F. Timmons, Univ. of Illinois.
Clarence W. Schroeder, Bradley College.
Ruth Shonle Cavan, Rockford.
Ernest W. Burgess, Univ. of Chicago.

(Discussion of points brought out in above symposium, by Evelyn Millis Duvall, Assoc. for Family Living, Chicago.)

Hand manuscripts to Chairman by end of meeting.

ZOOLOGY, Orlando Park, Chairman, Northwestern University, Evanston, Ill.

"Interrelations of Insects with Other Organisms."

Section A. Symposium

228 Natural History Bldg.

Election of Chairman for 1942-43.

1. Insects in relation to plants.
   a. Vectors of pathogenic organisms. L. R. Tehon, Ill. Nat. Hist. Survey.
   b. Other relations with plants. Harry Hoogstraal, Univ. of Ill.
2. Insects in relation with other insects.
   a. Entomophagy of solitary forms. W. V. Balduf, Univ. of Ill.
   b. Social life. A. E. Emerson, Univ. of Chicago.
3. Insect relations with animals other than insects.
   a. Parasites and vectors of pathogens, C. L. Metcalf, Univ. of Ill.
   b. Insects as food of vertebrates. H. H. Ross. Ill. Nat. Hist. Survey.

Section B. General

229 Natural History Bldg.

F. A. Brown, Jr., Chairman, Northwestern University

1. Zoological courses in the early days of the University of Illinois.
   H. J. Van Cleave, Univ. of Illinois.
2. Stimulating an interest in the history of natural science.
   S. C. Thomson, Chicago.
3. Wildlife conservation as a part of soil conservation.
   H. E. Gearhart, Edwardsville.
4. Work and endeavors of the Hoogstraal Mexican biological expeditions.
   Harry Hoogstraal, Univ. of Illinois.
5. Pre-caval anomalies of the cat.
   J. M. Sanders, Chicago.
6. Comparative pharmacology of myogenic and neurogenic hearts.
   C. L. Prosser, Univ. of Illinois.
7. Induced ovulation in Rana Pipiens, III.
   T. W. Robinson, Univ. of Illinois.
8. Pseudo-cleavage of the frog's egg.
   H. C. Hill, Jr. and T. W. Robinson, Univ. of Illinois.
9. Effect of testosterone propionate on territoriality in flocks of ring doves.
   Mary A. Bennett, Macomb.
10. Color discrimination in canaries.
    H. H. Shoemaker, Univ. of Illinois.
11. Distribution pattern of pheasants and quails in Illinois.
    C. O. Mohr and R. E. Yeatter, Ill. Nat. Hist. Survey.
12. A southern Illinois heronry.
    Collan Hill, Southern Ill. Normal Univ., Carbondale.
13. A preliminary report on a herpetological survey of Illinois.
    H. K. Gloyd, Chicago Acad. of Sciences.
14. Bass and bluegill feeding experiments.
    D. H. Thompson and Bruno von Limbach, Ill. Nat. Hist. Survey.
15. Results of a creel census at Chautauqua Lake.
    D. F. Hansen, Illinois Natural History Survey.
16. Cyclocephala Abrupta in Illinois.
    G. T. Riegel, Illinois Natural History Survey.
17. Distribution of two Illinoian Orthoptera.
    W. V. Balduf, University of Illinois.
18. Locality records of some Hydracarina from Illinois.
    C. C. Hoff, Quincy College.
19. Distribution of Spiders in the Indiana dunes associes.
    D. C. Lowrie, Chicago Academy of Sciences.

Hand manuscripts to Chairman before leaving.

COLLEGIATE SECTION

Papers and demonstrations by undergraduate college and university students. For information about this Section, write Harold R. Wanless, Dept. of Geology, University of Illinois, Urbana, Ill.

FRIDAY, MAY 8, 1942

Morning Session coincides with Senior Academy program on page 248.

1:00 p. m. Preliminary General Meeting. 100 Gregory Hall.
1:30 p. m. Presentation of papers in Sections A, B, and C.
4:30 p. m. Business meeting for delegates of science clubs or groups in the colleges and universities of Illinois. 100 Gregory Hall.

Banquet and evening program same as Senior Academy. See p. 248.

SATURDAY, MAY 9

Collegiate Section A.

BOTANY, ZOOLOGY, ENTOMOLOGY, PSYCHOLOGY and HYGIENE

100 Gregory Hall

1. Flowering plants collected in Wauconda county.
   Mary Jane Poranski, Northwestern University, Evanston.
2. Some extremes in the algae.
   Marian E. Westgate, Rosary College, River Forest.
3. The taxonomic significance of leaf epidermal hairs.
   Patricia Borgstrom, Rosary College, River Forest.
4. The herpetological distribution of a southern Mexican mountain and valley transect.
   Fred Shannon, Univ. of Illinois, Urbana.
5. Tundra bird studies.
   Oscar Hawkesly, Principia College, Elsah.
6. A preliminary ecological study of Slim Island.
   H. Merritt Paulson, Principia College, Elsah.
7. Collecting insects in winter.
   Chas. L. Remington, Principia College, Elsah.
8. The distribution of butterflies in a southern Mexican mountain-valley transect.
   Ralph Haag, University of Illinois, Urbana.
9. The ethnography of the Ibo, Nigeria, West Africa, with special reference to problems of primitive education.
   Julius Okala, Northwestern Univ., Evanston.
10. Scientific observations on flavors.
    Lee Froetscher, Elmhurst College, Elmhurst.
11. Identification of visual patterns protracted in time.
    Henry Pachowicz, Ill. Inst. of Technology, Chicago.
12. Students as school nurses.
    Thelma Newgard, Elmhurst College, Elmhurst.
13. The Effect of the descaling of winter buds on their growth in east central Illinois.
    John Voigt, E. Ill. State Tchrs. Coll., Charleston.

Collegiate Section B.

PHYSIOLOGY, ANATOMY and BACTERIOLOGY

213 Gregory Hall

1. Studies of cardiac frequency in the embryonic chick.
   Orlando A. Ponzio, Loyola Univ., Chicago.
2. Adventures with a new tissue illuminator.
   Alex Lutzow, Elmhurst College.
3. The microscopic anatomy of lebistes reticulatus.
   Warren Clohisy, Loyola Univ., Chicago.
4. Bleaching and mounting pig skeletons.
   Arthur Borucki, Loyola Univ., Chicago.
5. Effects of anterior pituitary extracts on certain organs in the white rat.
   PART I. Lorraine Pawlan; PART II, Dorothy Rodwell, Rockford College, Rockford.
6. The influence of forced exercise upon the guinea pig.
   Howard Raiser, Illinois Inst. of Technology, Chicago.
7. A study of placental extracts.
   C. M. Fordis, University of Illinois, Urbana.
8. Chlorophyll in treatment of athlete's foot.
   Frances Foster, University of Illinois, Urbana.
9. Zapatera spoilage of olives.
   V. Del Giudice, University of Illinois, Urbana.
10. Methods of preserving cultures.
    A. R. English, University of Illinois, Urbana.
11. Anatomy of His-Tawara.
    Larry Sanford, Wheaton College, Wheaton.

Collegiate Section C

PHYSICAL SCIENCE (Chemistry and Geology)

223 Gregory Hall

1. Electric well logs.
   James Pearson, University of Illinois, Urbana.
2. Chemical analysis of petroleum found in geodes.
   Albert Gruenewald, Kohn Kneeland, and Dan Lynch, Principia College, Elsah.
3. Ecological evidences of fluctuations in Alaskan glaciers.
   George P. Brown, University of Illinois, Urbana.
4. Fauna and probable correlation of the Arrowhead member of the Monte Cristo limestone; Nevada.
   Betty Teetor, University of Illinois, Urbana.
5. Structural control of ore deposition in the Arkansas cinnabar area.
   P. H. Dodd, Northwestern University, Evanston.
6. Festooned facies of the casper sandstone.
   Mary Tullgren, Northwestern University, Evanston.
7. A study of hydrogen ion concentration.
   Edith Godar, Rosary College, River Forest.
8. Radio activity with reference to the periodic table.
   Florence Schmisseur, College of St. Francis, Joliet.
9. Certain pH Determinations.
   Edna May Lewis, Rosary College, River Forest.

10. and 11. Papers in chemistry from Wright Junior College, Chicago.

12. Building a geology museum.
    Joseph Hoare, Augustana College, Rock Island.

JUNIOR ACADEMY MEETINGS.

Louis A. Astell, Local Arrangements Chairman, University H. S., Urbana

MAY 8-9,1942

UNIVERSITY OF ILLINOIS CAMPUS, URBANA

FRIDAY, MAY 8

8:00 a. m. Registration, Lower (East) Parlors, Woman's Bldg., Wright Street.

Setting up of exhibits. Lower Gym, Woman's Bldg.

Junior Academy members not otherwise occupied are cordially invited to attend the general morning session of the Academy in Lincoln Hall Theatre beginning at 9:30. There will be two main talks, one on Natural History in Illinois and the other on the Cyclotron.

12:00 Luncheon. University Place Christian Church, Wright Street. 45 cents.
1:00-4:30 Inspection and judging of exhibits. Lower Gym, Woman's Bldg.
2:00 General Session. 112 Gregory Hall.

Remarks by President Jack Frenzen, J. Sterling Morton High School, Cicero.
Presentation of Junior Academy officers.
Roll call of clubs and presentation of membership certificates.
Report of A.A.A.S. honorary members Mary Catherine Rowley, Canton H. S., and Bill Hahn, East Rockford H. S.
Illustrated talk, "Geologic history of the Grand Canyon," by Kenneth Gutschick, J. Sterling Morton H. S., Cicero.

Kenneth has a first hand knowledge of the Grand Canyon. He spends his summers there with his brother who is an instructor in Geology at University of Illinois.

Movie: "High speed motion pictures." Allen R. Moore, J. Sterling Morton H. S., Cicero.

Annual Afternoon Lecture: "Phosphorescence and Fluorescence" L. W. Phillips, Physics Dept., University of Illinois

6:00 Annual Banquet. University Place Christian Church. 60 cents.

8:15 Annual Lecture for Junior, Collegiate, and Senior Academies.
A Naturalist in the South Seas (illustrated), by Karl P. Schmidt, Chief Curator, Dept. of Zoology, Field Museum of Natural History, Chicago. University of Illinois Auditorium. Special section will be reserved for those attending Academy banquets.
Junior Academy Awards will be announced immediately after lecture.

SATURDAY, MAY 9

9:30 Visits to museums and Junior Academy exhibits, and inspection of research facilities of the University of Illinois and the scientific surveys located on the campus.
Details will be given in the Final Program.

N. B. Exhibits may remain in place for general public inspection Saturday, but must be removed by 6:00 p. m. Saturday.

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GENERAL INFORMATION

Headquarters

Messages sent to be received in Urbana prior to registration may be addressed in care of George E. Ekblaw, 216 Natural Resources Bldg., Urbana. On Friday and Saturday, May 8 and 9, they should be addressed in care of Mr. Ekblaw, Illini Union Bldg.

Headquarters for the Academy Friday forenoon will be in Lincoln Hall Foyer. Junior Academy headquarters will be in Lower (East) Parlors, Woman's Bldg.

Long distance telephone messages on *Friday* may be placed through Champaign 7-4044, except Junior Academy registrants may be reached through Champaign 7-2115.

Room Accommodations

Those who desire hotel accommodations should communicate directly with the hotels, which are as follows:

URBANA: *Urbana-Lincoln.* With bath, single $2.75 and $3.30; double $4.00 and $4.50; twin beds $5.50. With lavatory and toilet, single $1.90; double $3.00. Without bath, single $1.65; double $2.75. Suites and large rooms with bath, for 3 or more, $2.00 to $2.75 per person.

Plaza. With bath, single $2.00 and $2.25; double $3.00 and $3.25. Without bath, single $1.25 and $1.50; double $2.00 and $2.25.

CHAMPAIGN: *Inman.* With bath, single $2.50, $2.75, and $3.30; double $3.50, $5.00, and $5.50; twin beds $5.00, $5.50, and $6.60. With lavatory and toilet, single $2.00; double $3.00. Without bath, single $1.65 and $2.00; double $3.00; twin beds $3.30. Connecting rooms with bath, $5.00 for 2 persons, $6.00 for 3 or 4 persons. Rooms with 2 double beds, with bath, $6.75 for 3, $8.00 for 4 persons; without bath, $4.00 for 4 persons.

Tilden-Hall. With bath, single $2.20 and $2.75; double $3.85 and $4.40. Without bath, single $1.65; double $2.75.

Hamilton. With bath, single $2.00 and $2.50; double $3.00, $3.50 and $4.00. Without bath, single $1.50; double $2.50 and $3.00.

Accommodations for those who prefer not to stay at hotels will be provided in private rooming-houses in the University district, at rates ranging from 50 cents to $1.00 per person per night. These accommodations will be arranged in cooperation with the University Housing Division. Reservations should be made by May 1, on the enclosed form.

Meals

Luncheon and banquet tickets for the Academy and for the Junior Section will be obtained at their respective registration desks Friday forenoon May 8. However, reservations should be made on the enclosed form by May 1.

Inspection Trips

Inspection trips Saturday forenoon will start from the Illini Union Bldg. promptly at 9:30. Those who plan to go on these trips should so indicate at time of registration.